

35 U.S.C. §102(b) REJECTIONS

Applicant traverses the rejection of claims 1-10 and 13-15 as being anticipated by Fagan et al., U.S. Patent No. 5,720,300. In particular, Applicant has amended claim 1 to recite that the composite elongate core is formed “in part of a precipitation hardened material and in part of a superelastic material.” This feature is best seen in the longitudinal cross-sectional view of FIG. 1, where the superelastic material is represented by reference numeral 37, and in the specification, at page 9, lines 8-9, where reference numeral 37 is defined as “a first layer portion formed from a superelastic material.”

It is respectfully submitted that amended claim 1 is patentable over Fagan et al. since Fagan et al. does not teach or suggest a composite core formed in part of a superelastic material. Although Fagan at col. 8, ll. 44-59 discusses superelastic alloys such as nickel-titanium, the reference actually avoids using superelastic materials because of “poor column strength, poor torsional rigidity and, consequently, poor steerability.” Therefore, the reference does not teach or suggest a composite elongate core formed in part of a precipitation hardened material and in part of a superelastic material.

Likewise, Applicant has amended claim 8 with similar language. The Fagan reference and in particular, at column 10, lines 37-38, does not disclose or suggest making the composite elongate core in part from a superelastic material, but rather from a precipitation hardened alloy only.

Applicant respectfully submits that for the reasons given above, the invention as defined in amended claims 1 and 8 is distinguishable over the cited reference. Applicant further respectfully submits that claims 2-7, which depend upon claim 1 and claims 9, 10, and 13-15, which depend upon claim 8, are distinguishable over the cited reference.

35 U.S.C. §103(a) REJECTIONS

Applicant traverses the rejection of claims 11-12 as being unpatentable over Fagan et al., U.S. Patent No. 5,720,300 in view of Reiss et al., PCT Publication No. WO 98/22024. According to the Examiner, Reiss discloses an elongated core element manufactured from a martensitic alloy

that is heat-treated to render a fully hardened core. But Reiss adds nothing to the teachings of Fagan with respect to a composite elongate core formed "in part of a precipitation hardened material and in part of a superelastic material" as set forth in claims 1 and 8. The cited references therefore do not teach or suggest the present invention.

Moreover, with the present invention construction, the presence of the superelastic material changes the flexibility and strength characteristics of the composite elongate core which are clearly different than those of an elongate core, made entirely of precipitation hardenable material, of the Fagan et al. reference. In terms of advantages, the presence of both superelastic and precipitation hardened material in the composite elongate core benefits from the increased push and torque characteristics of the precipitation hardened material without sacrificing the flexibility and strength characteristics of the superelastic material. Based on the foregoing reasons, Applicant respectfully submits that the present invention as defined in claims 11-12 is not obvious in view of Fagan et al. and Reiss et al.

Applicant traverses the rejection of claims 16-25 as being unpatentable over Fagan et al., U.S. Patent No. 5,720,300 in view of Fariabi, U.S. Patent No. 5,636,641. Specifically, Applicant as mentioned above has amended claim 8, upon which claims 16-25 depend, to provide that the composite elongate core is formed "in part of a superelastic material." Fagan does not teach or suggest this limitation; the material selected for its core is used throughout. Fariabi does not teach the limitation of a composite elongate core formed "in part of a precipitation hardened material"; the nickel-titanium alloy of Fariabi is combined with Co-Ni-Cr for the entire core (Fariabi, col. 2, ll. 51-55; col. 3, ll. 32-35).

Accordingly, there is no motivation to combine the teachings of Fagan and Fariabi since there is no suggestion in either reference of using a core in part of one material and in part of another material. Both use its respective precipitation hardened or superelastic material homogeneously throughout the core. Therefore, Applicant submits that it is improper to combine the teachings of the two references.

Moreover, there is no expectation for success for the combination since Fagan specifically points out the engineering deficiencies of superelastic nitinol (as noted above). It in fact teaches

away from superelastic materials, so again, there is no motivation to combine its teachings with Fariabi

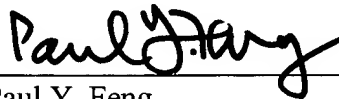
Lastly, the present invention allows the use of materials which have desirable mechanical properties but which are difficult to assemble to other guidewire components due to inherent surface properties, such as tenacious oxide layers, that result in poor bondability or solderability. Neither reference addresses these problems. Based on the foregoing reasons, Applicant respectfully submits that the present invention as defined in claims 16-25 is not obvious in view of Fagan et al. and Fariabi.

CONCLUSION

Applicant has attempted to respond to each and every objection and rejection set forth in the outstanding Office action. In view of the above amendments and remarks, Applicant respectfully requests that the application be reconsidered, the claims allowed and the application passed to issue.

Respectfully submitted,

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COMPOSITE GUIDEWIRE WITH DRAWN
AND FILLED TUBE CONSTRUCTION

Serial No. 09/470,874

Docket No. ACS-58267 (1700X)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

The following claims have been amended as indicated:

1. (Amended) A heat-treated elongate member formed at least in part of a composite elongate core, the composite elongate core formed [at least] in part of a precipitation hardened material and in part of a superelastic material.

8. (Amended) A heat-treated elongate member formed at least in part of a composite elongate core, the composite elongate core formed [of at least] in part of precipitation hardened material and in part of a superelastic material, [formed from a] the precipitation hardenable material comprising [of] at least two materials selected from the group consisting of nickel, cobalt, molybdenum, chromium, tungsten, and iron.